What is Claimed:

1. A swallowable capsule comprising:

a detector;

a pulse shaping device; and

at least one single channel analyzer.

2. The capsule of Claim 1 comprising at least two detectors.

3. The capsule of Claim 1 wherein the detector is a radiation detector.

4. The capsule of Claim 1 wherein the detector detects magnetic material.

5. The capsule of Claim 1 comprising a plurality of single channel analyzers.

6. The capsule of Claim 1 comprising a multiple channel analyzer.

7. The capsule of Claim 1 wherein the capsule is coated with a material.

8. The capsule of Claim 1 wherein the capsule is coated with a material for modifying the capsule's transit through the GIT.

9. The capsule of Claim 1 wherein the capsule includes a magnetically-activated switch.

10. The capsule of Claim 1 wherein the capsule includes an angular rate sensor.

11. A system for detecting particular tissues, the system comprising:

a capsule comprising a detector;

a substance for associating with the particular tissue, wherein the substance

is capable of being detected by the detector; and

a machine for verifying at least one of the detector and substance are suitable for use.

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12. A method for detecting target cells in a patient comprising:

marking target cells in the patient with a substance capable of being detected;

directing a detector through a naturally occurring body lumen in the patient to detect signals from the substance; and

mathematically transforming data representing at least some of the signals detected.

13. The method of Claim 12 comprising the step of verifying at least one of the amount, concentration, and activity of the marking substance.

14. The method of Claim 12 wherein the substance comprises a monoclonal antibody.

15. The method of Claim 12 wherein the substance comprises a peptide.

16. The method of Claim 12 wherein the substance comprises a nanoparticle.

17. The method of Claim 12 wherein the substance comprises a nucleotide sequence such as mRNA or DNA corresponding to a genetic material monoclonal antibody.

18. The method of Claim 12 wherein the substance comprises a liposome or liposome structure.

19. The method of Claim 12 comprising administering multiple radioisotopes to a patient.

20. The method of Claim 12 comprising acquiring energy spectra.

21. The method of Claim 12 comprising fitting particle energy spectra to a model.

22. The method of Claim 12 comprising fitting particle energy spectra to a model of the spectrum of an isotope.

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23. The method of Claim 12 comprising comparing received particle energies in different energy bands.

24. The method of Claim 12 comprising employing multiple detectors.

25. The method of Claim 12 comprising combining or comparing the outputs of multiple detectors to provide a spatial response pattern.

26. The method of Claim 12 comprising comparing temporal variation of acquired data with predetermined patterns.

27. The method of Claim 12 comprising employing multiple radiation sources external of a patient.

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